

RESPONSE AND AMENDMENT  
Serial No. 10/092,795  
Page 1 of 7

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant: Nallan et al.

Case: 7017/ETCH/CONE

Serial No.: 10/092,795

Filed: March 6, 2002

Examiner: Tuan H. Nguyen

Group Art Unit: 2813

Title: METHOD OF PLASMA ETCHING OF HIGH-K DIELECTRIC  
MATERIALS WITH HIGH SELECTIVITY TO UNDERLYING LAYERS

COMMISSIONER FOR PATENTS  
Box Non-Fee Amendment  
Washington, DC 20231

RESPONSE AND AMENDMENT UNDER 37 C.F.R. §1.111

S I R:

In response to the Office Action dated November 6, 2002, please amend the  
above-identified patent application as follows:

IN THE CLAIMS

Please rewrite claim 17 as follows:

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Sub  
B<sup>2</sup>  
17. (Amended) A method for plasma etching a workpiece having a layer of hafnium-oxide comprising the steps of:  
supplying between 20 to 300 sccm of chlorine and between 2 to 200 sccm of carbon monoxide;  
maintaining a gas pressure of between 2-100 mTorr;  
applying a bias power to a cathode electrode of between 5 to 100 W;  
applying power to an inductively coupled antenna of between 200 to 2500 W to produce a plasma containing said chlorine gas and said carbon monoxide gas;

PTO/SB/21 (08-00)

Please type a plus sign (+) inside this box → ☒Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/092,795
	Filing Date	March 6, 2002
	First Named Inventor	Nallan, et al.
	Group Art Unit	2813
	Examiner Name	Tuan H. Nguyen
Total Number of Pages in This Submission	Attorney Docket Number	7017/ETCH/CONE

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition Routing Slip (PTO/SB/69) and Accompanying Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks  		

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Patricia A. Verlangieri, Esq. Moser, Patterson & Sheridan, LLP
Signature	<i>Patricia A. Verlangieri</i>
Date	February 5, 2003

Approved for use through 10/31/2002. OMB 0851-0032  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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# FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

## Complete If Known

Application Number 10/092,785  
Filing Date March 6, 2002  
First Named Inventor Nallan, et al.  
Examiner Name Tuan H. Nguyen  
Group / Art Unit 2813  
Attorney Docket No. 7017/ETCH/CONE

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TOTAL AMOUNT OF PAYMENT (\$ ) 0

METHOD OF PAYMENT (check one)		FEE CALCULATION (continued)																																																																																																																																																																															
<p>1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:</p> <p>Deposit Account Number 20-0782</p> <p>Deposit Account Name Moser, Patterson &amp; Sheridan, LLP</p> <p><input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17</p> <p><input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27</p>		<p>3. ADDITIONAL FEES</p> <table border="1"> <thead> <tr> <th>Fee Code</th> <th>Large Entity Fee (\$)</th> <th>Small Entity Fee Code</th> <th>Small Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr> <tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for reexamination</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>116</td><td>400</td><td>216</td><td>200</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>117</td><td>920</td><td>217</td><td>460</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>118</td><td>1,440</td><td>218</td><td>720</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>128</td><td>1,950</td><td>228</td><td>980</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>119</td><td>320</td><td>219</td><td>160</td><td>Notice of Appeal</td><td></td></tr> <tr><td>120</td><td>320</td><td>220</td><td>160</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>121</td><td>280</td><td>221</td><td>140</td><td>Request for oral hearing</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive - 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\*\*or number previously paid, if greater; For Reissues, see above

SUBMITTED BY		Complete (if applicable)	
Name (Print/Type)	Patricia A. Verlangieri	Registration No. Attorney/Agent	42,201
Signature	<i>Patricia A. Verlangieri</i>	Telephone	(732) 530-8404
		Date	February 5, 2003

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## TELEFAX COVER SHEET

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TO: Commissioner for Patents

FAX NO.: 703-872-9318

FROM: Patricia A. Verlangieri, Esq.

DATE: February 5, 2003

MATTER: Serial No. 10/092,795 Filed: March 6, 2002

DOCKET NO.: 7017/ETCH/CONE

APPLICANT: Nallan, et al.

The following has been received in the U.S. Patent and Trademark Office on the date of this facsimile:

☐ Petition  
☐ Disclosure Statement & PTO-1449  
☐ Priority Document  
☐ Drawings ( sheets) informal  
☒ Response and Amendment (7 pages)

☒ Transmittal Letter (2 copies)  
☒ Fee Transmittal (2 copies)  
☐ Deposit Account Transaction  
☒ Facsimile Transmission Certificate dated February 5, 2003

## CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8

I hereby certify that this correspondence is being transmitted by facsimile to the Commissioner for Patents, Box Non-Fee Amendment, Washington, DC 20231 on February 5, 2003, Facsimile No. (703) 872-9318.

Allyson M. DeVesty  
Name of person signing this certificate

Allyson M. DeVesty 2-5-03  
Signature and date